

**Abstract**

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Lactones are prepared by catalytic carbonylation of oxiranes using a catalyst system comprising

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a) at least one carbonylation catalyst A comprising uncharged or anionic transition metal complexes of metals of groups 5 to 11 of the Periodic Table of the Elements and

b) at least one chiral Lewis acid B,

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with the exception of  $[(\text{salph})\text{Al}(\text{THF})_2][\text{Co}(\text{CO})_4]$ , as catalyst.